



Educating through National Technological University

by Norma Childs

Early in 1995 Emmett Paige Jr., then-assistant secretary of defense for command, control, communication and intelligence, asked the Signal Center how it was planning to meet its future need for advanced graduate-level training.

At that time, Signal Corps officers were selected for advanced graduate work at either the Naval Postgraduate school in Monterey, Calif., or the Air Force Institute of Technology at Wright-Patterson AFB, Ohio. In most cases, the officer was gone from the Army for two years.

The Army was required to reimburse the Navy or Air Force nearly \$25,000 for this training. The number of slots for this type of training were also being drastically reduced.

Then-MG Douglas Buchholz, Chief of Signal at the time, tasked the Signal Center's computer-science school to identify available options for obtaining required graduate-level technical training for Signal officers.

Options in February 1995, when Buchholz was briefed, included establishing an on-site college or university specializing in advanced engineering and computer-science degrees; a program based on purchased or rented videotapes; or a distance-learning approach. Candidate universities and colleges were given for each option. The Chief of Signal decided establishing a distance-learning solution would be in line with the Army's distance-learning initiatives and recommended an Army-wide

distance-learning program for graduate work be established.

In May 1995, the Signal Center briefed Paige on its research and options. Paige not only accepted the proposal for the Army but directed it be implemented Defense Department-wide.

Staff members from CSS and Paige's office worked together to put the contract in place. The contract was signed at the Pentagon Sept. 6, 1996. On the following Tuesday, Buchholz signed the first site memorandum of agreement under that contract.

Plans began to set up the satellite downlink on Nelson Hall, since courses are delivered to the worksite via satellite and/or Internet services.

The Signal Center's training-support center became a player in this link-up by connecting the downlinked National Technological University programs to its post-wide cable system. TSC continues to provide the technical support required for the program.

NTU is known for the excellence of its technical graduate program and its target audience of fast-paced, mobile professionals. Professors understand these individuals may not make every class because of professional obligations.

The NTU program allows videotaping of the programs. Professors, especially selected by NTU, also work with students via electronic mail and telephone to provide support.

Statistics show distance-learning students consistently outperform on-campus students.

NTU has also worked extensively with other military organizations. The Air Force procured a corporate-wide contract in the 1980s. Defense Information Systems Agency also purchased a corporate-wide program to meet its technical-training need.

Students have seven years to complete a masters program (usually 10 courses). There are already 59 established sites within the Defense Department community. Credits for courses already completed move with the individual, allowing uninterrupted programs of study.

NTU serves a "middleman" for instruction from 47 premier engineering and management universities, ranging from Georgia Institute of Technology, University of Illinois at Urbana-Champaign, Rensselaer Polytechnic Institute, Southern Methodist University, Colorado State University, Columbia University, University of Florida and University of Alaska. NTU's vision — enabling technical professionals and managers to share premier educational resources globally via telecommunications — certainly matched the Army's goals.

NTU has three major programs. First is its graduate program. NTU confers graduate degrees in 13 areas, including computer engineering, computer science, electrical engineering, engineering management, telecommunications and software engineering. NTU's newest program provides an international master's of business administration, with instruction originating from distant universities in such countries as Australia.

The total NTU curriculum consists of nearly 1,200 courses.

The second program NTU provides is a certificate of completion at graduate level in 34 areas for people who don't want to complete an entire master's degree. Topics range from algorithms and data structures, technical management, digital systems, integrated circuits and health physics.

To help individuals who have an older degree or a degree in a different discipline, NTU offers a "fast track" undergraduate program for computer science. The six condensed core courses (a 15-week semester course compacted into 16 hours) are equivalent to an undergraduate core program in computer science. After successfully completing this program, a student can enter a computer science master's program.

The third program is a seminar-based program called the advanced technology and management program. More than 300 seminars are presented annually.

A sample of recent topics includes fundamental concepts for intranet and Internet security; managing information systems; the strategic use of information technology; theater missile defense; creating expert web pages; introduction to Java; and collaborative organizations: creating and leading high-

performance teams.

These seminars are usually on a per-site fee basis.

In September 1997, 64 Signal Center people participated in an ATMP course entitled "Hands-on Multimedia Using Toolbook." The cost was just over \$40 a person. The course consisted of two videoteleconferences on successive Fridays, interactive synchronous web-based tutoring using a new product called I-Net and asynchronous practical exercises on Northeastern University's server.

NTU university professors primarily taught the first reorganized information-systems officer, or 25E, course via satellite technology. Students were simultaneously enrolled as graduate students while attending the 25E course. These students received a certificate of completion in telecommunications along with their 25E diploma.

Completed courses were also applicable to a regular master's degree program, giving these students a tremendous jump on a graduate technical degree.

The NTU program's cost is greater than on-post college programs. Military students will be allowed up to \$3,500 per year for tuition assistance in FY99. There's a still a cap on the per-semester-hour fee reimbursement; however, the

program allows waiver requests.

The plus of this new way of obtaining technical graduate degrees is the ability to continue a program from assignment to assignment without losing credits, and a flexible delivery system allowing work, home and an advanced technical degree to be achievable.

Most large corporations (IBM, Digital Equipment Corporation, Boeing, Eastman Kodak, Lucent Technologies, Motorola) are subscribers to these programs for their employees.

Ms. Childs works in the individual-training branch of the Signal Center's Regimental directorate of training, spearheading the Signal Center's distance-learning efforts. She is also the National Technological University coordinator for Fort Gordon. She holds a master's degree in instructional design from Florida State University, Tallahassee, Fla., and another master's in computer-based training from Columbia University, New York, N.Y.

Acronym Quick-scan

ATMP – advanced technology and management program
CSS – computer-science school
NTU – National Technological University
TSC – training-support center